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YOUNG COMMON SNOOK ON THE COAST OF GEORGIA

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THE common snook, *Centropomus undecimalis* (Bloch), generally considered a tropical or subtropical species, is rarely taken north of Florida on the Atlantic seaboard. Marshall (1958) states that its nominal northern limit on the Florida east coast is in the vicinity of Volusia County, but it is occasionally taken in Duval County and in the St. Johns River. Existing literature records only two specimens having been collected north of Florida. On deposit in the U. S. National Museum is a single specimen 23 inches long taken in 1887 near Savannah, Georgia (Leonard P. Schultz, personal communication). The second and the northernmost record, is a single specimen 124 mm S. L. taken in 1951 on Wadmalaw Island, South Carolina (Lunz, 1953).

During an investigation of salt-marsh fishes conducted from June of 1963 to December of 1964, at the University of Georgia Marine Institute, Sapelo Island, Georgia, a relatively large population of young-of-the-year snook was located at Sapelo Island. A limited amount of information exists for this species so a sampling program was begun to observe development and certain aspects of its ecology.

MATERIALS AND METHODS

Weekly collections were made with a 10×4 -foot $\frac{1}{8}$ -inch common sense seine. Most of the collection sites were toward the upper reaches of tidal creeks near road bridge culverts. On the seaward side of the culverts, the scouring action of the ebbing water creates small pools, three to four feet in depth and eight to ten feet in diameter. A standard sample consisted of four seine hauls across a pool. All snook and a synoptic series of other fishes collected were preserved. At each sampling station water samples were taken for salinity determination, and water temperature was recorded. Identification of the snook captured was made with the aid of a taxonomic key devised by Rivas (1962).

DISCUSSION

Sixty-four snook, ranging in size from 24.1-74.9 mm standard length, were taken in four separate drainage basins at a total of

seven locations (Fig. 1). Sampling for this and other studies was conducted in a wide variety of habitats about the island, with special attention directed to the mouth, mid, and headward regions of the tidal creeks in the four drainage basins. Two of these tidal creeks empty directly into the ocean, one into a sound at the south end of the island, and the fourth into a tidal river on the leeward side of the island. Snook were found in the headward regions of all four basins. None were taken at the mouth of any of the creeks, on the beach front, or in the sound.

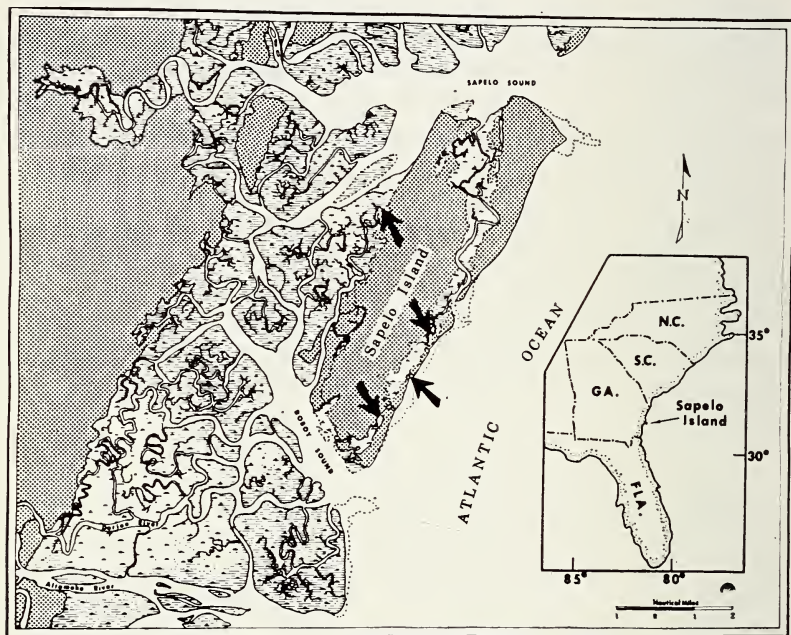


Fig. 1. The four drainage basins (indicated by arrows) in which snook were taken.

Volpe (1959) states that snook extruding milt and eggs were taken off sandy beaches in the mouths of various saline open-water passes in Florida, indicating that spawning occurs in these areas, with peak spawning probably occurring in early July. Therefore, the eggs probably develop in open water, and the young fish must make their way inshore to the estuarine nursery grounds where reduced salinities prevail, suggesting a life-cycle pattern common to many other inshore fishes; e.g. *Elops saurus* (Gehringer,

1959); *Megalops atlanticus* (Wade, 1962); *Mugil cephalus* and *M. curema* (Anderson, 1957 and 1958).

During the hurricane season of 1964, hurricanes "Cleo" and "Dora" passed near Sapelo Island. "Cleo" passed directly in front of Sapelo Island on August 29, after following a course parallel to the Florida coast eastward of the Gulf Stream, but by that time it had subsided to tropical storm intensity. "Dora" struck the mainland near Sapelo Island on September 9 with hurricane force winds after proceeding almost perpendicular to the coast and coming in across the Gulf Stream. Both hurricanes travelled along the Florida coast in their northward track. It is possible that the snook larvae were transported into the coastal waters of Georgia by means of some mechanism produced by the hurricane, larval drift, or a combination of the two.

Less intensive sampling in 1963, in many of the same areas where they were taken in 1964, produced no snook. Two additional specimens have been taken on Sapelo Island, by Dr. D. C. Scott of the University of Georgia and students in connection with class field trips. One specimen (57.7 mm S.L.) was taken on October 15, 1960, in the drainage system off Doboy Sound, and the second (96.3 mm S.L.) was taken on October 14, 1962, in the southernmost drainage system on the ocean side of the island (see Fig. 1). These two specimens were taken in years when no hurricanes struck the Georgia coast.

A plot of weight on length was made for the 64 specimens collected during this study. Although based on few specimens obtained over a long period of time, there are no indications that additional recruitment was occurring.

The following fishes were usually taken in association with common snooks (only juvenile forms of the first 5 species), *Megalops atlanticus*, *Elops saurus*, *Eucinostomus gula*, *Mugil cephalus*, *Leiostomus xanthurus*, *Mollienesis latipinna*, *Gambusia affinis*, *Cyprinodon variegatus*, and *Gobionellus stigmaticus*. All except the last four species, which are year-round inhabitants of these tidal creeks, apparently use the creeks only as nurseries. In addition, juvenile forms of the following fishes were taken occasionally in association with snook, *Brevoortia smithi*, *Anchoa mitchilli*, *Stellifer lanceolatus*, *Centropristes ocyurus*, *Cynoscion nebulosus*, *Bairdiella chrysura*, and *Dormitator maculatus*.